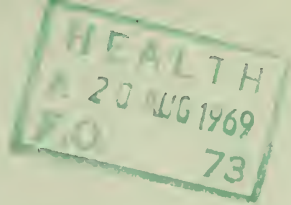




ACKD. BY

*enc*

*20/8/69*



# **Holywell Urban District Council**

## **ANNUAL REPORT**

OF THE

### **Medical Officer of Health**

D. P. W. ROBERTS, M.B, Ch.B., M.R.C.S.

L.R.C.P., D.R.C.O.G., D.P.H.

Together with the Annual Report of the

### **Public Health Inspector**

H. L. FIELD, M.A.P.H.I.

FOR THE YEAR

# **1968**



CYNGOR DOSBARTH DINESIG TREFFYNNON

A D R O D D I A D

B L Y N Y D D O L

Y

SWYDDOG IECHYD


(D.P.W. ROBERTS, M.B., Ch.B., M.R.C.S.,  
L.R.C.P., D.R.C.O.G., D.P.H.)

GYDA ADRODDIAD BLYNYDDOL YR  
ARCHWILIWR IECHYD CYHOEDDUS

(H.L. FIELD, M.A.P.H.I.)

AM

1 9 6 8



Digitized by the Internet Archive  
in 2016 with funding from  
Wellcome Library

<https://archive.org/details/b28848470>

U R B A N   D I S T R I C T   O F   H O L Y W E L L

Health Department Offices :

Civic Offices, Coleshill Street, Holywell Tel. No. 3375/6

PUBLIC HEALTH COMMITTEE 1968

Councillor W.H. Howitt  
(Chairman of the Council)

Councillor K.J.B. Caithness (Chairman)	Councillor J.H. Jones.
Councillor H.M. Dickinson.	Councillor R.J. Flaxman.
Councillor R. Mc Kenzie.	Councillor H.G. Roberts.
Councillor J.W. Edwards.	

PUBLIC HEALTH STAFF

Medical Officer of Health:

D.P.W. ROBERTS, M.B., Ch.B., M.R.C.S., L.R.C.P.,

D.R.C.O.G., D.P.H.

Public Health Inspector:

H.L. FIELD M.A.P.H.I.

Clerk:

Miss, L. Fenton.

Associated Chief Officers :-

Clerk of the Council :	R. Woodruff, F.C.C.S.
Engineer and Surveyor :	W. Isherwood, C.Eng., M.I.Mun.E., A.I.H.M.
Chief Financial Officer :	F. Long.



HOLYWELL URBAN DISTRICT COUNCIL

ANNUAL REPORT

of the

MEDICAL OFFICER OF HEALTH

for the year 1968

TO THE CHAIRMAN AND MEMBERS OF THE HOLYWELL URBAN DISTRICT COUNCIL:-

Mr. Chairman, Ladies and Gentlemen,

I have pleasure in submitting my annual report for 1968.

The Registrar General's estimate of the mid-year population was 8,680 which was an increase of 70 compared with 1967.

There were 145 births, which was an increase of 20 over 1967, of which 10 were illegitimate. The adjusted birth rate was 16.2 which compares with the national average of 16.9 per 1,000 population. The illegitimacy rate was 69 per 1,000 births, which was below the national average.

There were 3 still births which was a reduction of one over the previous year. The local still birth rate per 1,000 live and still births was 20, which compares with the national average, of 14.

There was one infant death under one year of age, giving a local infant mortality rate of 7 per 1,000 live births, which is very satisfactory compared with the national average of 8 per 1,000 live births.

During the year, 109 deaths occurred, giving a crude death rate of 12.6 and when adjusted, gives a figure of 8.2 per 1,000 population, which compares with the national average of 11.8.

I am rather astonished that the comparability factor for deaths should change from .88 to .65 in one year. I would not have expected the proportions of the population in the various age groups, to change so dramatically in one year.

The Mass X-Ray Unit ceased to attend at the end of 1967, and persons requiring an X-Ray of their chests, should consult their own doctor, who can refer patients to the hospital or chest clinic, to have this examination done.

Surveys of groups of the population are still carried out by Unit 'B' of the Mass Radiography Service and details are submitted, which include a report of a visit to Messrs. Courtaulds Limited, Greenfield.

There were 66 cases of measles notified during the year and 2 cases of tuberculosis, 2 cases of infective hepatitis, 2 cases of whooping cough, 2 cases of pneumonia, one case of dysentery, one case of food poisoning and one case of puerperal fever.







I hope that the public will accept the new measles vaccine, as measles is still a common disease and can now be prevented by vaccine. It is hoped in the not too distant future, to introduce a vaccine to prevent german measles (rubella). Its introduction should have a very marked effect in reducing the high incidence of congenital defects in new born babies, as it is known that german measles if contracted in early pregnancy, may damage the unborn child.

The Health Department staff were engaged in the sampling of the public water supply, including the water from St. Winefride's Well, and I am pleased to say that in general, the results were very satisfactory.

In conjunction with the County Council the Health Department staff have also been sampling the raw milk supply, in a search for brucella organisms, but it was not necessary to issue a pasteurisation order during the year.

During the year, 107 council properties and 20 private dwellings have been built. The Council have now completed their slum clearance programme, apart from one or two individual properties, that will be dealt with in the re-développement programme.

Slow progress has been made towards the provision of a sewage disposal works, and it may be some years before the scheme can be brought into operation.

I am pleased to say that the employees of the Council now enjoy excellent working conditions in the new offices, the only undesirable feature being the lack of soundproofing, in the offices.

I would like to express my thanks to the Chairman and Members of the Council, Council Officials and staff of the Health Department.

I am,

Your Obedient Servant,

D.P.W. ROBERTS.

Medical Officer of Health.

1. About 10 years ago, the British Government...

It is a very common mistake to suppose that the British Government...  
...the British Government...  
...the British Government...

2. The British Government...  
...the British Government...  
...the British Government...

3. The British Government...  
...the British Government...  
...the British Government...

4. The British Government...  
...the British Government...  
...the British Government...

5. The British Government...  
...the British Government...  
...the British Government...

6. The British Government...  
...the British Government...  
...the British Government...

7. The British Government...  
...the British Government...  
...the British Government...

## GENERAL STATISTICS

Population at mid-year 1968 (Registrar General's estimate)	8,680
Population change compared with previous year (increase of)	70
Number of inhabited properties (end of 1968)	3,179
Number of empty properties (end of 1968)	53
Rateable value of the Urban District at end of 1968	£433,949
Product of penny rate	£1,677
General rate in £1	13/6d.
Number of rate premises	3,232

## SOCIAL CONDITIONS IN THE URBAN DISTRICT

Holywell is an old market town pleasantly situated on land rising from the tidal estuary of the Dee, and with a long history of varied industries. The main industry now, is the production of viscose rayon staple at a large factory employing 2,500 persons. Other factories are engaged in paper making, and the weaving of woollen goods, and there are a number of distributive trades. Some residents work in nearby districts at a steel works, and in coal mining.



# VITAL STATISTICS

Live Births : Male 80 Female 65	145
Legitimate Live Births	135
Illegitimate Live Births	10
Illegitimate Local Rate per 1,000 Live Births	69
National Illegitimate Rate per 1,000 Live Births	84
Crude Birth Rate per 1,000 population	16.7
Birth Rate Comparability Factor	0.97
Birth Rate Standardised	16.2
National Birth Rate per 1,000 population	16.9
Still Births (total)	3
Legitimate Still Births	3
Illegitimate Still Births	-
Local Still Birth Rate per 1,000 live and still births	20
National Still Birth Rate per 1,000 Live and Still Births	14.8
Infant Deaths under One Year of Age	1
Legitimate Infant Deaths under One Year of Age	1
Illegitimate Infant Deaths under One Year of Age	-
Infant Mortality Rate per 1,000 Live Births	7
National Infant Mortality Rate per 1,000 Live Births	N.A. 183
Legitimate Infant Deaths per 1,000 Legitimate Live Births	7
Illegitimate Infant Deaths per 1,000 Illegitimate Live Births	-
Infant Deaths under 4 Weeks of Age (Neo-natal)	-
Legitimate Infant Deaths under 4 Weeks of Age	-
Illegitimate Infant Deaths under 4 Weeks of Age	-
Neo-natal Mortality Rate per 1,000 Live Births	-
National Neo-natal Mortality Rate	12
Total Peri-natal Deaths (still births and deaths under one week combined)	3
Peri-natal Mortality Rate per 1,000 Live and Still Births	20
National Peri-natal Mortality Rate per 1,000 Live and Still Births	24
Deaths in First Week of Life (early neo-natal period)	-
Early Neo-natal Mortality Rate per 1,000 Live Births	-
National Early Neo-natal Mortality Rate	10
Maternal Mortality, Including Abortion :	
Number of Deaths	Nil.
Rate per 1,000 Total Live and Still Births	Nil.

## DEATHS

Deaths : Male 56 Female 53	109
Crude Death Rate per 1,000 population	12.6
Comparability Factor	.65
Local Death Rate per 1,000 population	8.2
National Death Rate for England and Wales	11.8





### POPULATION CHANGES IN THE URBAN DISTRICT

The following table shows the change in population due to migration :-

Year	Mid-year population R.G. estimated figure	Population change during the year	Change in population due to births and deaths only during the year	Change in population due to migration
1959	8,320	+70	+48	+22
1960	8,360	+40	+31	+9
1961	8,400	+40	+51	-11
1962	8,470	+70	+38	+32
1963	8,470	Nil	+45	-45
1964	8,560	+90	+66	+24
1965	8,580	+20	+54	-34
1966	8,640	+60	-	+60
1967	8,610	-30	+17	-47
1968	8,680	+70	+36	+34

### DEATHS FROM PRINCIPAL CAUSES

The table below indicates the common causes of death :-

	<u>In Holywell</u>	<u>National Return</u>
Heart disease	31%	44%
Vascular lesions of C.N.S.	29%	17%
Cancer, excluding cancer of the lung.	7%	13%
Bronchitis	3%	5½%
Cancer of the lung.	4.5%	2½%
Pneumonia	5%	2½%
Other respiratory diseases	1.5%	2%
Other circulatory diseases	1%	5%
All other causes	18%	8½%





## CANCER :

The total number of deaths from cancer was 13, which was a decrease of 5 over 1967. The commonest site was cancer of the lung, which accounted for 5 deaths. This emphasises the continuing high incidence of cancer of the lung, which now accounts for 40% of all deaths, and the incidence continues to increase, and until the problems of atmospheric pollution and smoking are resolved, there is unlikely to be any significant reduction in this disease.

Arrangements were made in 1968, to install apparatus in the Health Department to measure the atmospheric pollution, and in particular the concentration of smoke and sulphur dioxide in the air, and it is hoped to publish annually the results of this work.

The figures shown below are extracts from the Registrar General's Returns :-

Cancer Deaths :	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Lung	2	7	3	4	3	4	6	4	2	5
Stomach	2	2	3	5	3	1	3	2	3	1
Breast	1	1	1	6	1	-	1	2	1	2
Uterus	2	-	-	1	-	-	-	-	2	1
Leukaemia	1	-	1	1	-	2	1	-	-	-
Other Sites	11	5	8	18	11	11	5	4	10	4
<hr/>										
TOTAL DEATHS										
ALL SITES ...	19	15	16	35	18	18	16	12	18	13
<hr/>										

## CORONARY HEART DISEASE :

There were 24 deaths due to coronary heart disease, during 1968 and this is an increase of 5 in the previous year. It has been shown statistically that people who smoke, take little exercise and are overweight, have an increased risk of coronary disease.

The following chart shows the annual deaths from this disease in the district for the past ten years :-

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Deaths	18	16	22	18	21	18	18	32	19	24



There has been a significant rise in the deaths due to coronary disease in this country, and it has been established that there are certain factors linked with the incidence of this disease, and these factors are as follows :-

1. High Blood Pressure.
2. Obesity.
3. Smoking Cigarettes - the more cigarettes smoked - the greater the risk of developing this disease.
4. High Blood Cholesterol.
5. Physical Inactivity.
6. Development of mental stress and less important factors which include heredity and race.

It is hoped that within a few years to come, it will become feasible for the screening of groups of the population at the greatest risk, that is men between the ages of 30-45 years and women between the ages of 40-55 years and giving advice to those who show the greatest risk of developing this disease. There are certain factors which reduce the odds of developing the disease, these being to reduce smoking, taking more exercise, reducing the intake of sugar and starchy food, and if obese, of making a serious attempt to reduce weight.

#### SCREENING PROCEDURES

During the past few years there have been projects for screening the general population in certain selected centres in the country, to ascertain whether mass screening procedure would be at all feasible and practical, in the detection of disease and its treatment and possible prevention.

The diseases that come to mind in this context are namely :-

Cancer of the Cervix ( the neck of the womb).  
Diabetes.  
High Blood Pressure.  
Defects of Vision.  
Hearing Defects.  
Anaemia.  
Urinary Infections in Young People.  
Coronary Heart Disease.

More work needs to be done in the future before any large scale screening procedure can be set in motion, in particular, information on the levels of normality for the population.

It may be 10 years before screening procedure will be introduced on a mass scale and pending this, the only screening that is being undertaken, on any scale at present, is the detection of blood diseases in new born babies, due to errors of metabolism, which if not treated can cause mental defects, and which now can be successfully treated.





INFANT MORTALITY :

There was one death of an infant under one year of age, details of which are shown below :-

<u>Age at Death</u>	<u>Cause of Death</u>	<u>Sex</u>
One Month	1. (a) Bilateral Bronchopneumonia	Male
	(b) Sepsis after operation of jejunal obstruction.	

There were three still births, details of which are shown below :-

<u>Cause of Death</u>	<u>Sex</u>
Hydrocephalus and Spina Bifida	Female
Intra Uterine Death	Male
Anencephalic	Female





TABLE SHOWING VITAL STATISTICS OF THE DISTRICT FOR PAST TEN YEARS

Year	Registrar General's mid-year estimate of population	Number of local births per R.G. Returns	Local crude birth rate per 1,000 population	Local adjusted rate	National birth rate per 1,000 popula- tion	Local Deaths - R.G. Returns	Crude Death rate per 1,000 population	Adjusted local rate per 1,000 popula- tion	National death rate per 1,000 population	Infant deaths : Under one year of age	Local infant mortality rate	National infant mortality rate
1958	8,250	171	20.72	20.92	16.4	94	11.39	13.44	11.7	7	40.93	22.5
1959	8,320	161	19.35	19.54	16.5	113	13.58	14.39	11.6	8	19.68	22.0
1960	8,360	150	17.94	18.11	17.1	119	14.23	11.52	11.5	2	13.33	21.7
1961	8,400	173	20.59	20.79	17.4	122	14.52	13.21	12.0	4	23.12	21.4
1962	8,470	184	21.72	21.93	18.0	146	17.23	N.A.	11.9	7	38.04	21.6
1963	8,470	174	20.54	19.2	18.2	129	15.23	N.A.	12.2	6	34.38	20.0
1964	8,560	168	19.6	19.0	18.4	102	11.92	N.A.	11.3	-	N.A.	20.0
1965	8,580	172	20.0	19.4	18.0	118	13.7	10.2	11.5	1	5.8	19.0
1966	8,640	133	15.4	14.9	17.7	133	15.4	10.5	11.7	1	7.0	19.0
1967	8,610	125	14.5	14.1	17.2	108	12.5	11.0	11.2	1	8.0	18.3
1968	8,680	145	16.7	16.2	16.9	109	12.6	8.2	11.8	1	7.0	N.A.

N.A. Not Available



CAUSE OF DEATH	Sex	Total All Ages	Under 4 weeks	4 weeks and under 1 year	AGE IN YEARS											Over 75
					1-5	5-15	15-25	25-35	35-45	45-55	55-65	65-75				
Other Tuberculosis	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Malignant Neoplasm - Stomach	M	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malignant Neoplasm - Lung, Bronchus	M	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malignant Neoplasm - Breast	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malignant Neoplasm - Uterus	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Malignant Neoplasms, Etc.	M	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Diseases of Nervous System, Etc.	M	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chronic Rheumatic Heart Disease	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Hypertensive Disease	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ischaemic Heart Disease	M	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Forms of Heart Disease	M	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cerebrovascular Disease	M	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Diseases of Circulatory System	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Influenza	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pneumonia	M	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

continued /...



CAUSE OF DEATH	Sex	Total All Ages	Under 4 weeks	4 weeks and under 1 year	AGE IN YEARS										75 and Over
					1 - 5	5 - 15	15 - 25	25 - 35	35 - 45	45 - 55	55 - 65	65 - 75			
/Continued															
Bronchitis and Emphysema	M	3	-	-	-	-	-	-	-	1	1	-	-	1	-
	F	1	-	-	-	-	-	-	-	-	-	-	-	1	-
Other Diseases of Respiratory System	M	2	-	-	-	-	-	-	-	1	1	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peptic Ulcer	M	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	1	1	-
Intestinal Obstruction and Hernia	M	2	-	1	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Diseases, Genito-Urinary System	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of Musculo-Skeletal System	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Vehicle Accidents	M	2	-	-	-	1	-	-	-	-	-	-	1	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other Accidents	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	-	-	-	-	-	-	-	-	-	-	1	-	-
Suicide and Self-Inflicted Injuries	M	1	-	-	-	-	-	-	-	-	-	-	1	-	-
	F	-	-	-	-	-	-	-	-	-	-	-	1	-	-
TOTAL ALL CAUSES :-															
	M	56	-	1	-	-	2	-	1	7	9	23	13		
	F	53	-	-	-	-	-	-	-	2	6	9	36		





INFECTIOUS DISEASE NOTIFICATIONS DURING 1968

	Under 1 year	1 - 2 years	3 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 20 Years	21 - 35 Years	36 - 65 Years	Over 65 Years	Age Unknown	At all Ages	Deaths
Scarlet Fever	-	-	-	1	-	-	-	-	-	-	1	-
Whooping Cough	-	1	1	-	-	-	-	-	-	-	2	-
Measles	3	14	28	18	-	1	2	-	-	-	66	-
Ophthalmia	-	-	-	-	-	-	-	-	-	-	-	-
Neonatorum	-	-	-	-	-	-	-	-	-	-	-	-
Pneumonia	-	-	1	1	-	-	-	-	-	-	2	6
Erysipelas	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid and Typhoid	-	-	-	-	-	-	-	-	-	-	-	-
Food Poisoning	-	1	-	-	-	-	-	-	-	-	-	-
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	1	-
Puerperal Pyrexia	-	-	-	-	-	-	1	-	-	-	-	-
Dysentery	-	-	-	1	-	-	-	-	-	-	1	-
Tuberculosis Resp.	-	-	-	-	-	-	-	-	-	-	1	-
Tuberculosis Non Resp.	-	-	-	-	-	-	1	-	-	-	2	1
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-
Meningococcal Infection	-	-	-	-	-	-	-	-	-	-	-	-
Infective Hepatitis	-	-	-	1	-	-	1	-	-	-	2	-





NOTIFIABLE DISEASE IN THE DISTRICT OVER THE PAST TEN YEARS :-

[illegible]



## INFECTIOUS DISEASES :

There were 66 cases of measles notified during the year, which is a considerable reduction in the figures for 1967. A vaccine is now available for the protection of susceptible children from the age of one year, but the response from the public so far, has been generally very slow. In my opinion, there will be significant numbers of cases in the future, until the level of infection has been reduced in the community.

There were 2 cases of infective hepatitis and 2 cases of whooping cough. Whooping cough is a disease that is being eliminated as the result of immunisation. There were 2 notifications of pneumonia, one of dysentery, one of food poisoning, one of puerperal fever and 2 of non-pulmonary tuberculosis.

The staff of the Health Department and of the Flintshire County Council Welfare Department have been very concerned about one case of tuberculosis in particular. This is of a man who is living in most undesirable conditions and who is partly responsible for these circumstances. He is very un-cooperative and is still a constant source of anxiety to the local authority.

## CHEST X-RAY FACILITIES :

The Mass X-Ray Unit ceased to call at Holywell on a routine basis at the end of 1967:

Listed below is a report from the Mass Radiography Service, by the kind permission of Dr. T.F. Jarman, on the survey carried out in 1968, at the factory of Messrs. Courtaulds Limited :-

	<u>Total</u>	<u>Male</u>	<u>Female</u>
<u>Employees</u>			
Total Number Examined	806	746	60
Total found to be abnormal cases	10	10	-
(a) Referred to Chest Physician as cases requiring further investigation.	8	8	-
(b) Other abnormalities of the chest	2	2	-
<u>Employees in Chemical Division</u>			
	<u>Total</u>	<u>Male</u>	<u>Female</u>
Total Number Examined	88	79	9
Total Found to be abnormal cases	1	1	-
(a) Referred to Chest Physician as cases requiring further investigation.	-	-	-
(b) Other abnormalities of the chest	1	1	-





PROVISION OF SERVICES UNDER THE NATIONAL HEALTH

SERVICES ACT, 1946

The following local services are the responsibility of the Flintshire County Council, and I am indebted to the County Medical Officer of Health, Dr. G.W. Roberts, for allowing me to give the following details :-

SECTION 22 - CARE OF MOTHERS AND YOUNG CHILDREN - INFANT WELFARE

CENTRES :

The Clinic premises are in Park Lane, Holywell and an infant welfare clinic is held every Thursday afternoon from 1.30 - 4.30 p.m. There is also an additional Clinic in School Lane, Greenfield, where an infant welfare clinic is held every Tuesday afternoon 1.30 - 4.30 p.m.

Welfare foods (vitamin tablets, cod liver oil and orange juice) are distributed at these clinics.

ANTE NATAL CLINICS :

Ante Natal Clinics are held at Park Lane Clinic weekly and are staffed by hospital and nursing personnel, under the direction of the Consultant Obstetrician.

Talks are given to mothers attending these Clinics by the health visitors on childbirth and baby management.

FAMILY PLANNING :

Family planning is available at Flint and Rhyl.

CERVICAL SMEAR CLINICS :

Clinics are now available by appointment at Connah's Quay and Rhyl for women to attend to have cervical smears taken. Women who wish to avail themselves of this service, should contact their own general practitioner or call at the Infant Welfare Clinic.

DENTAL CARE OF EXPECTANT MOTHERS :

This is carried out by the school dental staff of the County Council, and the service is free during the period of pregnancy and up to one year after the birth of the baby. It is regrettable that more mothers do not take advantage of these facilities.

SECTION 23 - MIDWIFERY SERVICES :

There are two midwives, who are also district nurses, working in the area, also two part-time nurses, and they are responsible for the ante-natal care, delivery and post-natal surveillance of these patients, under the general direction of the patient's doctor.

ORIGINAL ARTICLES

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA  
IN HEALTHY AND IN DISEASED SUBJECTS  
BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA

IN HEALTHY AND IN DISEASED SUBJECTS

STUDIES ON THE EFFECT OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA  
IN HEALTHY AND IN DISEASED SUBJECTS  
BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA

IN HEALTHY AND IN DISEASED SUBJECTS  
BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA  
IN HEALTHY AND IN DISEASED SUBJECTS

BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA

IN HEALTHY AND IN DISEASED SUBJECTS  
BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA

IN HEALTHY AND IN DISEASED SUBJECTS  
BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.

THE EFFECT OF THE INGESTION OF PURE AND IMPURE LACTULOSE ON THE  
GASTRIC ACIDITY AND THE PERMEABILITY OF THE GASTRIC MUCOSA

IN HEALTHY AND IN DISEASED SUBJECTS  
BY DR. J. H. HARRIS, JR., AND DR. J. H. HARRIS, JR.



#### SECTION 24 - HEALTH VISITORS :

There are two full-time health visitors who are responsible for giving advice to families on all aspects of health education. These duties have increased of late due to the ever expanding needs of the community, especially the older members. Their duties are complimentary to the work of the general practitioners, who are often too busy to be able to give the necessary time to such matters as health education.

#### SECTION 25 - HOME NURSING SERVICES :

This very valuable provision is carried out by the district nurses, who are usually midwives, and the demands of the service increase yearly as the proportion of old people rises in the community.

#### SECTION 26 - VACCINATION AND IMMUNISATION :

##### Smallpox :

As a result of Ministry of Health recommendation it is now the policy to vaccinate infants at one year of age instead of at birth or within the first three months, and the vaccination rate has fallen considerably during the past year.

##### Poliomyelitis :

Vaccination against poliomyelitis continued throughout the year, but oral vaccination has now superceded the salk vaccine which was given by injection.

##### Measles :

Vaccination is now available to susceptible children at one year of age and it is hoped that the public will accept the vaccine and that mass vaccination will reduce the incidence of the disease.

##### TUBERCULOSIS :

All 13 year old children are offered vaccination (by the use of live attenuated tubercle bacilli B.C.G.) against this disease and the majority of children are protected. The percentage of children who do not require vaccination is high i.e. they have already had contact with the disease and developed a successful immunity, and this indicates a significantly high level of tuberculosis infection in the community.

#### SECTION 27 - AMBULANCES :

The ambulance service is radio controlled and administered from the headquarters at Mold. A local station is situated in Holywell.

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...

## MENTAL HEALTH AND SUBNORMALITY :

Visits are paid by mental welfare officers of the County Council to mentally ill patients who require advice and help.

Subnormal children who cannot be educated in an ordinary school, and who are not severely retarded (i.e. in the idiot category), are admitted to the Training Centre at "Tirionfa", Rhuddlan. There they receive training to the limits of their capabilities. There is also an Adult Training Centre, at Greenfield, for men and women.

## VENEREAL DISEASE :

Treatment is available at the following special clinics :-

### H.M. Stanley Hospital, St. Asaph

Males and Females - Tuesday 5.30 - 7: p.m.

### Chester Royal Infirmary

Males - Wednesday 5 - 7 p.m. Saturday 11 a.m. - 1. p.m.

Females - Monday 5 - 7 p.m. Thursday 5 - 7 p.m.

Treatment is confidential and free, inclusive of travelling expenses.

## NURSING HOMES :

The following Nursing Home is registered with the County Council, and is inspected periodically : Glyn Abbot, Bagillt Road, Holywell.

## WELFARE HOMES :

Persons who are unable to look after themselves satisfactorily may be admitted to County Council Homes which are situated at Y Gorlan, Rhyl; The Lawns, Rhyl; Part of the Womens Convalescent Home; Carr Holme, Prestatyn; Park House, Prestatyn; Hafad Glyd, Shotton; and Mold.

A site has been acquired by the County Council in Holywell and although there are certain difficulties to be ironed out it is hoped that an early start will be made.

## SECTION 27 - NATIONAL ASSISTANCE ACT, 1948

This section conveys powers on District Councils to remove persons who "are aged, infirm, or suffering from chronic diseases, and are living in insanitary conditions, are unable to look after themselves and are not receiving adequate care and attention from other". In 1968 it was not necessary to take any legal action. Legal action is only taken as a last resort and every effort is made to persuade people to accept advice and treatment for their benefit. The demands of the aged increase annually as the proportion of this group within the population rises. This problem of the care of the aged is aggravated by relatives often living considerable distances away, being unable or unwilling for various reasons, to help in the care of their next of kin.

should be the same for all other cases of this kind.

Under the present system, the only way to get a

person out of the country is to get a passport.

Under the present system, the only way to get a

person out of the country is to get a passport.

Under the present system, the only way to get a

person out of the country is to get a passport.

Under the present system, the only way to get a

CONFIDENTIAL

Under the present system, the only way to get a

CONFIDENTIAL

Under the present system, the only way to get a

CONFIDENTIAL

Under the present system, the only way to get a

Under the present system, the only way to get a

Under the present system, the only way to get a

CONFIDENTIAL

Under the present system, the only way to get a

CONFIDENTIAL

Under the present system, the only way to get a

Under the present system, the only way to get a

CONFIDENTIAL

Under the present system, the only way to get a



A number of visits were made to cases of people in Holywell, who were living in unsatisfactory conditions and arrangements were made for their removal to hospital either on a temporary or permanent basis.

#### PUBLIC HEALTH LABORATORY SERVICE :

The local public health laboratory is at Chester (Dr. P. Poole is the Director) and bacteriological examination of specimens sent from the Urban District are examined here. They have been most co-operative and my gratitude is extended to them for their advice and help throughout the year.

#### FOOD HYGIENE (GENERAL) REGULATIONS, 1960 :

Routine inspections of food premises were maintained, and there are 37 food businesses and 29 catering businesses, all of which comply with the requirements of Regulations 16 and 19.

There is one poultry processing business dealing with about 9,000 birds a year, mostly hens, which is visited regularly. Two percent of the birds were rejected as unfit for human consumption giving a total weight of 800 lbs. The premises are in an area scheduled for early re-development and it is hoped that the business will soon be transferred to a more suitable location, as I am very dissatisfied with the arrangement for the slaughter and subsequent storage of dressed chickens.

#### HOUSING :

During the year the following units of housing accommodation were provided in the town :-

New houses and flats provided by the Council	107
Private properties, mainly bungalows	20

Since the war the Council have built 838 houses, bungalows and flats also 329 private dwellings have been built.

The table below indicates the yearly totals of new housing construction in the town over the past ten years :-

<u>Year</u>	<u>New Council Houses Bungalows or Flats</u>	<u>New Private Houses or Bungalows</u>	<u>Number of Inhabited Properties in Town</u>
1968	107	20	3179
1967	74	15	2994
1966	59	9	2590
1965	38	32	2571
1964	-	57	2552
1963	-	21	2526
1962	20	16	2660
1961	77	27	2576
1960	49	8	2494
1959	9	9	2450





The waiting list for council accommodation at the end of 1968 was as follows :-

Number of families in general list	approximately	100
Number of persons waiting for old persons' accommodation	approximately	20

#### WATER SUPPLY :

There is an efficient and abundant supply of bacteriologically and chemically pure water which is supplied to this area by the Alwen Reservoir. The Water Engineer and the staff of the Central Flintshire Water Board normally carry out the analysis of the water. Eleven samples were taken during the year and the majority were satisfactory and when otherwise appropriate action was taken to have the abnormality rectified.

The St. Winefride's Well is supplied with water from an addit fed by an underground water pipe. Samples of the water were sent to the Public Health Laboratory for analysis at periodic intervals.

A recent sample of water was submitted for analysis on the 23rd September, 1968 from the Ambulance Station, Holywell and the results were as follows :-

#### ANALYSIS :

<u>Location</u>	<u>Holywell</u>
pH	8.5
Colour (Hazen Units)	13
Electrical Conductivity	90
Turbidity	Less than 2
Free Carbon Dioxide	Nil.
Alkalinity as (CaCO <sub>3</sub> )	14
Permanent Hardness (as CaCO <sub>3</sub> )	12
Total Hardness (as CaCO <sub>3</sub> )	26
Oxygen absorbed (4 hrs. @ 27° C)	
Nitrogen : Free and Saline Ammonia	
Albuminous Ammonia	
Nitrites (NO <sub>2</sub> )	
Nitrites (NO <sub>3</sub> )	
Phosphates (P 205)	
Silicates (SiO <sub>2</sub> )	
Sulphates (SO <sub>4</sub> )	
Chlorides (Cl)	13
Metals : Calcium as CaCO <sub>3</sub>	20
Magnesium as CaCO <sub>3</sub>	6
Iron (Fe)	
Manganese (Mn)	
<u>Bacteriological :</u>	
Coliform / 100 mls.	Nil.
B. Coli/ 100 mls.	Nil.
Plate Count : 2 days 37°C	Nil.
3 days 22°C	Nil.
Clostridium Welchii in 40 mls.	Nil.
Class (MoH Standard)	1



### MILK SUPPLY :

The responsibility for the routine sampling of milk rests with the County Council Health Department and close co-operation is maintained between the County Council and Mr. Field.

The Health Department carried out a considerable amount of work during the year in the taking of samples of milk for bacteriological analysis in connection with the search for brucella abortus organisms in unpasteurised milk.

Brucellosis in cows can cause undulant fever in human beings if unpasteurised milk is drunk.

### DRAINAGE AND SEWERAGE

There are no cesspools or pail closets in the district, but there are small groups of properties whose drainage is received into septic tanks, and the Council at the time of writing this report are considering a scheme to sewer certain properties in upper Holywell.

The Ministry have now held an enquiry and a decision is being awaited as to whether approval can be obtained for the provision of a sewage disposal works in the area.

### SUPERANNUATION :

During the year 4 medical examinations were carried out on employees of the Urban District in connection with fitness for employment and absence through ill-health.

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...

...the ... of the ...



PUBLIC HEALTH INSPECTOR'S REPORT

Mr. Chairman, Ladies and Gentlemen,

I have pleasure in presenting my sixth Annual Report for 1968.

This year saw the realization of our hopes for better office accommodation, by the completion in May, of the new Civic Offices in Coleshill Street. Working conditions are now much better, with proper facilities for interviewing members of the public.

The Civic Amenities Act came into force during the year and has proved most useful in dealing with abandoned car bodies in the District. A total of fifty six cars in varying degrees of dilapidation, were disposed of by informal action.

A potential danger to public health occurred in one of the slaughterhouses, with a case of sudden death of a bullock due to anthrax. To minimise any spread of infection, the carcase was incinerated in the slaughterhouse yard and the premises cleansed and disinfected. The treatment was successful, and there was no spread of the infection.

I would like to express my thanks to the Chairman and Members of the Council, and the Medical Officer of Health for their support and interest, and all members of the staff for their ready help and co-operation.

Yours faithfully,

H.L. FIELD.

Public Health Inspector.

THE HISTORY OF THE

REIGN OF THE

EMPEROR

OF THE

OF THE

OF THE

OF THE

OF THE

OF THE

OF THE

OF THE

## PARTICULARS OF NOTICES AND INSPECTIONS DURING THE YEAR :

Visits made in connection with public health matters were as follows :-

<u>NATURE</u>	<u>NUMBER</u>
Visits and re-visits to premises following complaints	120
No access	52
Inspections under the Housing Acts	237
Refuse Collection and Disposal	240
Inspections of Slaughterhouses	36
Visits to Slaughterhouses	440
Visits to Food Premises	36
Inspections of foodstuffs	61
Water Supplies	41
Milk Supplies	8
Caravans	18
Infectious Diseases	22
Miscellaneous	63
Interviews	174

## SERVICE OF NOTICES

<u>Informal</u>	<u>Formal</u>	<u>Reasons for Notices</u>	<u>Result</u>
21	Nil.	Nuisances	Abated

Number of dwellinghouses in which repairs were carried out in consequence of formal and informal action - 5

## REFUSE COLLECTION AND DISPOSAL :

These services were maintained satisfactorily although administrative difficulties were experienced in establishing and maintaining a charge hand for the refuse collection service. It is anticipated that this difficulty will be overcome in the near future.

The use of refuse sacks is being extended to newly-constructed Council houses which have been constructed in the modern way with restricted vehicular access.

## HOUSING :

During the year fifty-five unfit houses were demolished, and another six were closed. Forty families comprising a total of one hundred and fifteen persons were moved from sub-standard houses to Council owned accommodation.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

Method

- 1. The first part of the method section is a description of the sample. It discusses the characteristics of the sample and the way in which it was selected.
- 2. The second part of the method section is a description of the instruments used in the study. It discusses the reliability and validity of the instruments.
- 3. The third part of the method section is a description of the procedures used in the study. It discusses the steps that were taken to collect and analyze the data.
- 4. The fourth part of the method section is a description of the statistical methods used in the study. It discusses the tests that were used to analyze the data.
- 5. The fifth part of the method section is a description of the ethical considerations that were taken into account in the study.
- 6. The sixth part of the method section is a description of the limitations of the study.
- 7. The seventh part of the method section is a description of the strengths of the study.
- 8. The eighth part of the method section is a description of the conclusions that can be drawn from the study.
- 9. The ninth part of the method section is a description of the implications of the study.
- 10. The tenth part of the method section is a description of the future research that is needed.

Results

The results of the study are presented in this section. It discusses the findings of the study and the way in which they relate to the objectives of the research.

Conclusion

The conclusion of the study is presented in this section. It discusses the overall findings of the study and the way in which they relate to the objectives of the research.

The study has shown that there is a significant relationship between the variables studied. The results of the study are consistent with the hypotheses that were tested.

The study has also shown that there are some limitations to the study. These limitations are discussed in the method section.

The study has some implications for practice. These implications are discussed in the conclusion section. The study also has some implications for future research.

## INSPECTION AND SUPERVISION OF FOOD :

Routine inspections of food premises were maintained and the following complaints were received from members of the public :-

<u>Condition</u>	<u>Action Taken</u>
Mouldy steak pie	Manufacturers warned.
Charred pieces of dough in loaf	Manufacturers warned.
Discolouration in corned beef	Manufacturers warned.
Bottled milk containing a slug	Producer warned.
Mouldy potato cakes	Vendor warned of importance of stock rotation.
Mouldy cooked chicken	Referred to neighbouring local authority.

## CARCASES INSPECTED AND MEAT CONDEMNED :

	<u>Cattle Excluding Cows</u>	<u>Cows</u>	<u>Calves</u>	<u>Sheep and Lambs</u>	<u>Pigs</u>
Number killed	966	10	27	12,687	1,119
Number <u>Not</u> Inspected	-	-	-	-	-
<u>All diseases except Tuberculosis and Cysticerci</u>					
Whole carcase condemned	1	-	2	8	2
Carcases of which some part or organ was condemned	93	3	-	435	22
<u>Tuberculosis only</u>					
Whole carcase condemned	-	-	-	-	-
Carcases of which some part or organ was condemned	-	-	-	-	-
<u>Cysticerci</u>					
Carcases of which some part or organ was condemned	3	-	-	-	-
Carcases submitted to refrigeration	3	-	-	-	-
Generalised and totally condemned	-	-	-	-	-

## SLAUGHTERHOUSES :

Three premises continued to be licensed, although one was not used during the year.

Another slaughterhouse however, had an increased throughput with the despatch of carcasses for the Wirral and Liverpool. This trend is likely to continue, with the proposed extension and mechanisation of the premises. More time has had to be spent on meat inspection duties which include regular week-end work, which is shared by a colleague from a nearby authority.





CONDEMNED FOOD - 1968 :

Various unsound tinned foods were inspected and disposed of after voluntary surrender.

OFFICES, SHOPS AND RAILWAY PREMISES ACT, 1963 :

Inspections of these premises continued, and there were two reported accidents :-

<u>Number of premises registered :-</u>	<u>Number of persons employed :-</u>		
Offices	18	82	
Retail Shops	86	364	
Wholesale Shops and Warehouses	4	33	
Catering Establishments	6	21	
Fuel Storage Depots	1	1	
	<u>115</u>	<u>501</u>	Males 158
			Females 343

STORAGE OF PETROLEUM SPIRIT :

Licences were issued in respect of twelve premises where petroleum spirit is stored. Excellent co-operation is received from the Officers of the County Fire Service, in inspections, and testing of equipment.

Factories (1) - Inspections for purposes of provisions as to health, 1968 :

Premises	<u>M/C Line</u>	<u>No. on Register</u>	<u>Number of Inspections</u>	<u>Written Notices</u>	<u>Occupier PROSECUTED</u>
	(2)	(3)	(4)	(5)	(6)
(i) Factories in which sections 1,2,3,4 and 6 are to be enforced by Local Authorities.	1	5	3	-	-
(ii) Factories not included in (i) in which section 7 is enforced by the Local Authority.	2	34	28	-	-
(iii) Other premises in which section 7 is enforced by the Local Authority (excluding outworkers premises)	3	-	-	-	-
TOTAL:-		39	31	-	-

1. The first part of the document is a list of the names of the members of the committee.

## 2. The second part of the document is a list of the names of the members of the committee.

3. The third part of the document is a list of the names of the members of the committee.

## 4. The fourth part of the document is a list of the names of the members of the committee.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

## 5. The fifth part of the document is a list of the names of the members of the committee.

6. The sixth part of the document is a list of the names of the members of the committee.

## 7. The seventh part of the document is a list of the names of the members of the committee.

8. The eighth part of the document is a list of the names of the members of the committee.

9. The ninth part of the document is a list of the names of the members of the committee.

10. The tenth part of the document is a list of the names of the members of the committee.

11. The eleventh part of the document is a list of the names of the members of the committee.

12. The twelfth part of the document is a list of the names of the members of the committee.

(2) Cases in which defects were found :-

	M/C Line No. 2	Number of cases in which Defects were found		Number of cases in which prosecutions were instituted	
		Found	Remedied	To H M.I.	By H M.I.
<u>Want of Cleanliness S.1.</u>	4	-	-	-	-
<u>Overcrowding S.2.</u>	5	-	-	-	-
<u>Unreasonable Temperature S.3.</u>	6	-	-	-	-
<u>Inadequate Ventilation S.4</u>	7	-	-	-	-
<u>Ineffective Drainage of Floor S.6</u>	8	-	-	-	-
<u>Sanitary Conveniences</u>					
<u>S.7.</u>					
(a) Insufficient	9	1	-	-	1
(b) Unsuitable or defective	10	-	-	-	-
(c) Not separate for sexes	11	-	-	-	-
<u>Other offences against THE ACT (not including offences relating to outwork).</u>	12	-	-	-	-
TOTAL :-		1	-	-	1

Factories Act, 1961, Part VIII, Section 133 :

OUTWORKERS : There were no notifications of outworkers in the Holywell Urban Area.

1925

1. The first group of people who are interested in the study of the history of the United States are the people who are interested in the history of the United States.

3

•

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

... ..

2

*Journal of Management Education* 30(6)

4

... ..

7

... ..

1. *Phragmites australis* (Cav.) Trin. ex Steud.

1. The first group of people who are interested in the study of the history of the United States are the people who are interested in the history of the United States.

1

1

1. The first group of people who are not in the labor force are those who are not in the labor force because they are not in the labor force.

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Lichtenthaler (1987). The total chlorophyll content was determined by the method of Arar and Cook (1980). The carotenoid content was determined by the method of Lichtenthaler and Weil (1983). The total phenolic content was determined by the method of Singleton and Rossi (1965). The total flavonoid content was determined by the method of Zhishen et al. (1999). The total protein content was determined by the method of Lowry et al. (1951). The total amino acid content was determined by the method of Kjedahl (1882). The total sugar content was determined by the method of Dubois and Gilles (1950). The total lipid content was determined by the method of Folch et al. (1957). The total nucleic acid content was determined by the method of Burton (1956). The total mineral content was determined by the method of Ashby et al. (1984). The total organic acid content was determined by the method of Saito et al. (1987). The total alkaloid content was determined by the method of Kishimoto et al. (1989). The total saponin content was determined by the method of Kishimoto et al. (1989). The total tannin content was determined by the method of Kishimoto et al. (1989). The total terpenoid content was determined by the method of Kishimoto et al. (1989). The total steroid content was determined by the method of Kishimoto et al. (1989). The total glycoside content was determined by the method of Kishimoto et al. (1989). The total alkaloid content was determined by the method of Kishimoto et al. (1989). The total saponin content was determined by the method of Kishimoto et al. (1989). The total tannin content was determined by the method of Kishimoto et al. (1989). The total terpenoid content was determined by the method of Kishimoto et al. (1989). The total steroid content was determined by the method of Kishimoto et al. (1989). The total glycoside content was determined by the method of Kishimoto et al. (1989).

4.

•

...the ...  
...the ...  
...the ...  
...the ...  
...the ...

... ..

... ..

100





